

## CLAIMS

What is claimed is:

1. A network with QoS (Quality of Service) control, which comprises:
  - a first connection port for receiving first class signals;
  - 5 a second connection port for receiving second class signals which require a higher transmission priority than the first class signals;
  - a QoS control element, which receives the first class signals and the second class signals transmitted from the first connection port and the second connection port, respectively; and
- 10 10 a third connection port, which outputs the first class signals and the second class signals.
2. The network device of claim 1, wherein the QoS control element allows the second class signals to pass first according to port priorities.
3. The network device of claim 1, wherein the QoS control element allows the second class signals to pass first according to a TOS (Type Of Service) definition item.
- 15 15 4. The network device of claim 1, wherein the QoS control element allows the second class signals to pass first according to a VLAN (Virtual Local Area Network) tag.
5. The network device of claim 1, wherein the first connection port connects to a LAN.
6. The network device of claim 1, wherein the second connection port connects to at least one telephone device.
- 20 20 7. The network device of claim 1, wherein the third connection port connects to a WAN.

8. The network device of claim 1, wherein the first class signal is a data packet.
9. The network device of claim 1, wherein the second class signal received by the second connection port is an analogue voice signal.
10. The network device of claim 9, wherein the second class signal received by the QoS control element is a digital voice data packet that is converted from the analogue voice signal.
- 5 11. The network device of claim 9 further comprising:
  - an encoder/decoder for converting the analogue voice signal into a digital voice signal;
  - 10 a digital signal processor for compressing the digital voice signal into a digital voice data packet; and
  - 15 a CPU for encapsulating the digital voice data packet.
12. A network device with QoS control, which comprises:
  - a first connection port, which connects to a LAN and receives a data packet;
  - 15 a second connection port, which connects to a telephone device and receives an analogue voice signal;
  - an encoder/decoder, which converts the analogue voice signal into a digital voice signal;
  - 20 a digital signal processor, which compresses the digital voice signal into a digital voice data packet;
  - a CPU, which encapsulates the digital voice data packet;
  - a QoS control element, which receives the digital voice data packet and the data packet and allows the digital voice data packet to pass first when the digital

voice data packet and the data packet are received simultaneously; and

a third connection port, which outputs the digital voice data packet and the data packet.

13. The network device of claim 12, wherein the QoS control element allows the digital voice data packet to pass first according to port priorities.

5           14. The network device of claim 12, wherein the QoS control element allows the digital voice data packet to pass first according to a TOS definition item.

10          15. The network device of claim 12, wherein the QoS control element allows the digital voice data packet to pass first according to a VLAN tag.

16. A QoS control method, which comprises the steps of:  
receiving a first class signal via a first connection port;  
receiving a second class signal that requires a higher QoS than the first class signal via a second connection port;  
allowing the second class signal to pass first through the control of a QoS control element; and  
outputting the first class signal and the second class signal via a third connection port.

17. The method of claim 16, wherein the QoS control element allows the second class signals to pass first according to port priorities.

20          18. The method of claim 16, wherein the QoS control element allows the second class signals to pass first according to a TOS (Type Of Service) definition item.

19. The method of claim 16, wherein the QoS control element allows the second class

signals to pass first according to a VLAN tag.

20. The method of claim 16, wherein the first class signal is a data packet.
21. The method of claim 16, wherein the second class signal received by the second connection port is an analogue voice signal.
- 5        22. The method of claim 21, wherein the second class signal received by the QoS control element is a digital voice data packet converted from the analogue voice signal.

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